Application Number: T3-00001 **Scientific Score**: 60 or below

Title: CIRM Training Program in Stem Cell and Regenerative Medicine

Specific names of individuals and institutions are blacked out to preserve applicant confidentiality where possible.

Proposal Abstract as Submitted by Applicant

The [redacted] CIRM Training Program in Stem Cell and Regenerative Medicine will provide six postdoctoral Ph.D. or M.D. (Type III) trainees per year with state of the art research experience and coursework in a rich scientific environment, with the goal of preparing them for productive, independent research careers in stem cell and regenerative medicine. Consistent with the mission of [redacted], the program will focus on stem cells in aging and age-related diseases, with particular concentration in neurodegenerative disorders. Required courses will be offered in Stem Cell Biology, Neurodegenerative Disorders, and Legal, Ethical and Social issues in Stem Cell Research; trainees will also be invited to participate in any other courses at the Institute. Related activities will include weekly joint laboratory meetings involving all CIRM trainees and their mentors, a weekly journal club in stem cell and regenerative medicine, a special lecture series titled Seminars in Stem Cell Biology featuring invited outside speakers, and the [redacted] Summer Scholars Program for high school and college students, whom trainees will participate in supervising. Research opportunities will be available in a broad range of disciplines related to the goals of the CIRM, including human embryonic stem cell biology, adult neurogenesis, neurodegenerative diseases (stroke, Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis), cancer, arthritis, biology of aging, programmed cell death, DNA damage and repair, stem cell mechanisms in model organisms (yeast, *C. elegans*, *Drosophila*), and research methodology (imaging, genomics, proteomics, knockout/transgenics, drug screening). Trainees will have access to a variety of multidisciplinary activities at [redacted], including the Program in Stem Cell and Regenerative Medicine, [redacted] Basic Biology of Aging, Center for Integrative Studies of Aging, Morphology Core, Genomics Core, Proteomics Core, Transgenics Core, and Discovery Translation Unit.

Benefit of this Program to California

This program will benefit the people and the state of California by providing high-quality training in the scientific, clinical, social, and ethical aspects of stem cell research to the scientists and clinicians who will develop and apply future therapies in this rapidly emerging field.

Summary of Review

This is a focused, well-planned type III proposal that is limited in scope but of good quality. This institution has noteworthy strengths in age-related disorders, and a training program in stem cell biology would fit well in this setting. The program will offer three stem cell-related courses including stem cell biology, legal/ethical issues, and neurodegenerative disorders. There is concern that the primary course in stem cell biology will be taught by a new faculty member with no teaching or training experience,

nor any senior-author publications in stem cell biology. Another concern is the relatively limited opportunity available for research training in stem cell biology because the application lists only three faculty members whose primary interest is in stem cells. The institution has not made collaborative arrangements with other stem cell centers to strengthen the program. The program director has extensive experience with educational and administrative responsibilities and is well known for research in neuronal progenitor cells and their responses to nervous system injury. The faculty at this institution is uniformly excellent and all but one has successfully trained post-doctoral fellows. A fellowship committee, which oversees the program, will select trainees and solicit applicants by advertisement. However, the application provides no information about the size or quality of the applicant pool, or about other existing training programs.

Overall Strengths and Weaknesses

The strengths of this program are in the leadership of the program director and the scientific environment of the institution with its focus on age-related disease. However, the institution's commitment to stem cells is new and consequently weak in its representation of faculty involved in this field. The primary stem cell course will be taught by a new faculty member with no teaching experience or track record. The proposal does not describe other existing training programs or collaborative efforts, and therefore presents considerable uncertainty as to how successful this new program would be.

Recommendations

Not recommended for funding at this time.

	Pre	Post	Clinical	Total
Fellows Requested:	0	6	0	6
Fellows Recommended:	0	0	0	0

	Year 1	Total
Budget Requested:	$ 398,732	$ 1,250,970
Budget Recommended:	0	0